

Association of serum cortisol with critical illness scoring and prognosis in intensive care unit

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*Abstract

Background: The prevalence of adrenal insufficiency and association of serum cortisol with prognosis in intensive care unit patients is controversial. Some studies have shown a direct association between serum cortisol and bad prognosis while in other studies no such association has been made.

Objective: This study was designed to evaluate the association between serum cortisol and prognosis of patients in intensive care unit.

Methods: This was a cross-sectional study performed on intensive care unit patients of Bou-Ali teaching hospital in Qazvin (Iran) in 2009. Serum cortisol levels were measured before and after injection of cosyntropin. Basal cortisol level below 441 nmol/l was interpreted as adrenal insufficiency. In patients with serum cortisol between 441 and 938 nmol/l following injection of cosyntropin the level of serum cortisol was re-measured after 60 min. Patients with serum cortisol response less than 255 nmol/l were interpreted as having partial adrenal insufficiency. Later, patients were divided into 4 groups based on APACHE scoring system. Association of serum cortisol with APACHE score, hypotension, intubation, and mortality was evaluated.

Findings: Of 60 patients under study, none found to have adrenal insufficiency. Serum cortisol was independently associated with mortality, hypotension, and intubation.

Conclusion: Based on results found through this study, Adrenal insufficiency was not common in ICU patients and serum cortisol could be used as a predictor of prognosis.

Keywords: Adrenal Insufficiency, Cortisol, Intensive Care Unit, Prognosis

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